

Studies on the North American PROCTOTRUPIDÆ,
with Descriptions of New Species from Florida.

(PART I.)

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The Hymenopterous family *Proctotrupidæ*, is an extensive one, comprising, for the most part, parasitic species of minute size, all of the greatest economic importance, their natural food being the eggs and and larvæ of the more destructive insect pests, and to the husbandman their services are invaluable.

The species composing the subfamily *Bethylinæ*, seem to confine their attacks to Lepidopterous larvæ belonging to the family *Teneidæ*; the *Ceraphroninæ*, principally to Dipterous and Hymenopterous larvæ, although species in the genera *Lygocerus*, *Megaspilus*, and *Ceraphron* are found parasitic in plant-lice, belonging to the Homopterous family *Aphididæ* in the bodies of which they live and undergo their transformations.

The species in the subfamily *Scelioninæ* are almost entirely egg parasites: *Scelio* is a parasite in grasshopper eggs; *Telias* and allied genera in the eggs of moths and butterflies; while *Telenomus*, *Hadronotus* and *Prosacantha* live parasitically in the eggs of various bugs (*Hemiptera*).

The extensive subfamily *Platygasterinæ*, comprises numerous genera and species, generally of the smallest size, and of a black color, all of which are found parasitic in Dipterous larvæ, belonging principally to the families *Cecidomyidæ* and *Tipulidæ*.

The *Diapriinæ* destroy fungus eating *Diptera*; while the subfamily *Myrmarinæ*, among which are the smallest Hymenopters known, are egg parasites. They have been reared from the eggs of moths, butterflies and sawflies, and a few of the species are parasitic on scale insects, belonging to the Homopterous family *Coccidæ*.

Thus we see, the study of these little insects is of the greatest economic importance, and the species and their habits ought to be made known as soon as possible, so that when practicable, they may be reared in quantities, colonized, distributed and utilized for the destruction of insect pests and the benefit of man.

In the following memoir, I have brought together, arranging them as far as possible in their proper genera, all the described species known to me to occur in our fauna North of Mexico, and give descriptions of such of those in my collection that appear to be new or unknown to science, reared or collected by me, during several years study of the family.

Subfamily **HELORINÆ**.

I. **HELORUS** Latreille.

- 1 1. **Helorus paradoxus** Prov. (*Copelus paradoxus* Prov.) Petite faune Ent. du C, II, p. 539--40.
Hab.—Cap Rouge, Canada.

Subfamily **DRYININÆ**.

II. **DRYINUS** Latreille.

- 2 1. **Dryinus atriventris** Cress. Trans. Am. Ent. Soc. IV, p. 193.
Hab.—Texas.
- 3 2. **Dryinus bifasciatus** Say. Leconte's Ed. Say's Works, I, p. 384.
Hab.—Indiana.
- 4 3. **Dryinus alatus** Cress. (*Gonatopus alatus* Cr.) Trans. Am. Ent. Soc. IV, p. 193.
Hab.—Texas.

III. **GONATOPUS** Lyngh.

- 5 1. **Gonatopus decipiens** Prov. Add. et Corr. a la Faune Hym., p. 179.
Hab.—Canada.
- 6 2. **Gonatopus contortulus** Patton. Can. Ent. XI, p. 65.
Hab.—Connecticut.

IV. **LABEO** Haliday.

- 7 1. **Labeo incertus** n. sp.
♀. Length .08 inch. Black, polished. Occiput deeply concave. Antennæ and palpi, pale yellow. Mesothorax smooth without grooves; metathorax rugulose. Legs, including coxæ, pale yellow, middle and posterior femora and tibiæ brownish. Abdominal petiole, long, it with most of the abdomen testaceous. Wings hyaline, veins pale, the stigma large with a clear spot at base; no stigmal vein.
Hab.—Florida.

V. **CHELOGYMUS** Haliday.

VI. **ANTEON** Jurine.

- 8 1. **Anteon tibialis** Say. Leconte's Ed. Say's Works II, p. 730.
Hab.—Indiana.

VII. **MYSTROPHORUS** Foerster.

VIII. **APHELOPUS** Dalman.

- 9 1. **Aphelopus americanus** n. sp.
♂. Length .06 inch. Black, subopaque, covered with fine, whitish pubescence. Head punctate. Antennæ long, scape brownish yellow, flagellum dark brown. Mesoscutum with two delicately indicated grooves and some sparse widely separated punctures. Legs, including coxæ, pale yellow, the posterior femora and tibiæ, along upper surface, and claws, brown. Abdomen black, shining. Wings hyaline, veins pale, two basal cells, stigma large, lunate, brown, stigmal vein as long as the stigma, pale.
Hab.—Florida.

This species approaches very closely to a European species in my collection, *Aphelopus melaleucus* Dalm., but the color of the legs, and wing veins easily distinguishes it.

Subfamily **EMBOLEMINÆ**.

IX. **EMBOLEMUS** Westwood.

10 1. **Embolemus nasutus** n. sp.

♂. Length .08 inch. Robust, black, subopaque. Head finely punctate; ocelli prominent; eyes large, arched, giving the insect a peculiar appearance, as the head is short, vertically; the black mandibles are long, strongly curved, with a long tooth near tip. Antennæ 10-jointed, black, pubescent, the first two joints short, third longest, following joints subequal. Abdomen sessile, black. Legs black, knees and tarsi, pale or whitish. Wings hyaline, veins hyaline, almost invisible; there is one basal cell and a clear space in the stigma.

Hab.—Florida.

Described from one specimen taken in a low marsh. The mandibles project slightly in the form of a little snout, which suggests the name.

X. **PEDINONEMUS** Foerster.

Subfamily **BETHYLINÆ**.

XI. **SCLEROCHROA** Foerster.

11 1. **Sclerochroa gallicola** n. sp.

♀. Length .07 inch. Smooth, polished, honey-yellow, including legs and antennæ. The oblong head is smooth without ocelli; the eyes small, round, placed well forward near the anterior corners. The antennæ issue from the forward part of the head, just above the mouth, are 12-jointed and about as long as the head; the first joint long, somewhat dilated, the second much shorter, while the following joints are very small, sub-moniliform. Abdomen, pointed ovate. No wings.

Hab.—Florida.

Described from one specimen, reared from cynipidous oak gall *Andricus foliatus* Ashm.

12 2. **Sclerochroa cynipsiphila** n. sp.

♀. This species, in size and general appearance, exactly resembles the preceding, but the head, thorax, and legs are reddish or rufo-testaceous; the metathorax waxy-white, while the abdomen is black.

Hab.—Florida.

Described from one specimen, reared from cynipidous oak gall *Holcaspis omnivora* Ashm.

13 3. **Sclerochoa macrogaster** n. sp.

♀. Length .12 inch. This species, which was taken at large, differs from the others, in color and in its much larger and more elongated form. The head is black, polished; antennæ honey-yellow; metathorax, knees, and tarsi honey-yellow; legs and thorax rufo-piceous. The abdomen, which is about two and a half times longer than the thorax, is elongate, pointed ovate, black and polished, with a few hairs at tip.

Hab.—Florida.

Described from one specimen. This genus seems to be identical with genus *Microps* Haliday.

XII. **SIEROLA** Cameron.

14 1. **Sierola maculipennis** n. sp.

♀. Length .08 inch. Black, polished. Mesothorax without grooves. Antennæ and legs honey-yellow (antennæ? 15-jointed). Wings hyaline, veins brown. The

radial cell is narrow, closed; the stigma broad, thick, with a clear spot at base: the basal nervure is strongly curved and thickened, in a dusky cloud: there is another cloud at and below stigma and base of radial cell.

Hab.—Florida.

XIII. **PERISEMUS** Foerster.

15 1. **Perisemus floridanus** n. sp.

♂, ♀. Length .12 inch. Black, finely punctate. Head with some coarser scattered punctures. The 12-jointed antennæ, palpi and legs, honey-yellow. All femora and middle and posterior tibiæ, black. Wings hyaline, veins pale, stigma brown. The male is slightly smaller and the antennæ toward apex brownish.

Hab.—Florida.

This species approaches quite closely to a European species in my collection, *Perisemus triarcolatus* Foerst.

16 2. **Perisemus mellipes** n. sp.

♀. Length .13 inch. This species differs from *P. floridanus* in its larger size and the uniform dark honey-yellow legs. The antennæ are infuscated toward tips: wings hyaline, stigma black.

Hab.—Florida.

XIV. **GONIOZUS** Foerster.

17 1. **Goniozus foveolatus** n. sp.

♀. Length .12 inch. Black, finely punctate, with coarse scattered foveæ. Antennæ 13-jointed, honey-yellow. Legs black, the knees and tarsi honey-yellow. Wings hyaline, stigma black, basal cells two.

Hab.—Florida.

18 2. **Goniozus grandis** n. sp.

♂, ♀. Length .25 inch. Black, highly polished with a few coarse, scattered punctures. Antennæ and legs rufous. The head and thorax in certain lights have a bluish tinge. Wings subhyaline, veins yellowish. The ♂ differs from ♀ in having a much narrower head, longer, darker antennæ and clear hyaline wings.

Hab.—Florida.

XV. **EPYRIS** Westwood.

19 1. **Epyris analis** Cress. Trans. Am. Ent. Soc. IV, p. 193.

Hab. — Texas.

20 2. **Epyris læviventris** Cress. l. c. p. 190.

Hab.—Texas.

21 3. **Epyris rufipes** Say.

Bethylus rufipes Say. Leconte's Ed. Say's Works, I, p. 221.

Epyris rufipes Cress. l. c. p. 194.

Hab.—Missouri, Texas.

XVI. **ISOBRACHIUM** Foerster.

22 1. **Isobrachium floridanum** n. sp.

♀. Length .10 inch. Black, subopaque, finely punctate, sparsely pubescent. Antennæ and legs ferruginous, femora with a dark line above. Wings fusco-hyaline, pubescent; veins brown; stigma small.

Hab.—Florida.

This genus is distinguished from *Perisemus* and *Goniozus* by the basal vein not having a backward directed branch.

(TO BE CONTINUED.)